

I claim:

1. In a process for the preparation of a catalyst for the production of ethylene oxide comprised of silver supported on an alumina carrier,
5 the improvement which comprises subjecting the carrier to aqua-thermal treatment prior to deposition of silver.
2. The process of claim 1 wherein the said aqua-thermal treatment comprises a sequential series of at least two carrier washings with intermediate carrier calcination.
- 10 3. The process of claim 1 wherein the said aqua-thermal carrier treatment comprises a sequence of carrier wash and carrier calcination cycles, such that the carrier is subjected to sequential wash cycles numbering from one to five, and then the carrier is
15 calcined at a specified temperature before being again subjected to sequential wash cycles numbering from one to five.
4. The process of claim 3 wherein the wash-calcine-wash sequence is repeated until the carrier is subjected to a total of from two to five wash cycles, each wash cycle including from one to five individual carrier washes, and from one to four calcination cycles positioned
20 between successive wash cycles.
5. The process of claim 1 wherein the said aqua-thermal carrier treatment comprises carrier calcination at temperatures above 200° C.
6. The process of claim 5 wherein the said carrier calcination is at least 0.5 hours in duration.

5

7. The process of claim 6 wherein the said carrier calcination is performed in air or other gaseous environment including oxygen.

8. The process of claim 6 wherein the said carrier calcination is performed in a gaseous environment that is essentially free of oxygen.

9. The process of claim 1 wherein the carrier is heated to 50-1000° C after the aqua-thermal carrier treatment.

10

10. The process of claim 1 wherein the said aqua-thermal treatment comprises carrier washing in water that is essentially free from impurities.

11. The process of claim 1 wherein the said aqua-thermal carrier treatment comprises carrier washing in aqueous solutions of ammonium fluoride, such that the molar concentration of ammonium fluoride is between 0.0001 and 5.0.

15

12. The process of claim 1 wherein the said aqua-thermal carrier treatment comprises carrier washing in aqueous solutions of mineral acids including hydrohalic or hydroxyhalic acids, or the oxyacids of nitrogen, phosphorous and sulfur, or carboxylic acids, or sulfonic acids, or phosphonic acids, or the like, such that the molar concentration of hydronium ion is between 0.0001 and 5.0.

20

13. The process of claim 1 wherein the said aqua-thermal carrier treatment comprises carrier washing in aqueous solutions of salts of alkali metal ions (Group IA), alkaline earth metal ions (Group IIA) or ammonium ion, or the like, with acetate, carbonate, hydroxide, halide,

nitrate, oxalate, phosphate, sulfate or the like, such that the molar concentration of the salt is between 0.0001 and 5.0.

14. The ethylene oxide catalyst carrier prepared ^{by} the process of claim 1.

A.D.S.
2/28/02

15. An ethylene oxide catalyst comprising silver supported on the carrier of claim 1.

A.D.S.
2/28/02

5

10

15

20

25